

A HEALTHIER DENMARK – IN A HEALTHIER WORLD



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A MUTUAL CHALLENGE

Denmark is one of Europe's leading life science nations and the Danish healthcare system is among the best in the world. Nonetheless, Denmark has not adequately managed to unite the strong public-private forces when it comes to prevention and treatment of chronic conditions e.g., diabetes, cancer, cardiovascular diseases, depression, hearing loss, dermatological conditions, and bladder, intestinal and urological conditions.

This holds true even though chronic conditions constitute one of the largest future challenges for our society. The number of Danes suffering from some of the most prevalent chronic conditions have increased by almost 25 per cent over the past 10 years¹. Today more than 4 out of 10 Danes live with one or more chronic conditions². A development that will continue as the population gets older.

This reduces the number of hands available in the labour market and puts pressure on the healthcare sector. From 2000 to 2017 the public health expenditure increased by almost 50 per cent and the majority of public health expenditure cover treatment of chronic conditions³. As a society we need to act on this.

Both in the interest of the many people living with chronic conditions and their relatives.

However, also out of consideration for the many citizens that we need to keep a bit longer on the labour market to ensure the future financing of our welfare society.

A global challenge

The challenge related to chronic conditions are not limited to Denmark. Chronic conditions account for more than 60 per cent of the accumulated global disease burden, measured by shorter life span and lower quality of life due to disability⁴.

Chronic conditions are basically a slow pandemic, which lies in the shadow of COVID-19, that consequently makes populations more vulnerable to pandemics due to people living with chronic conditions risking a more severe course of illness than the remaining population.

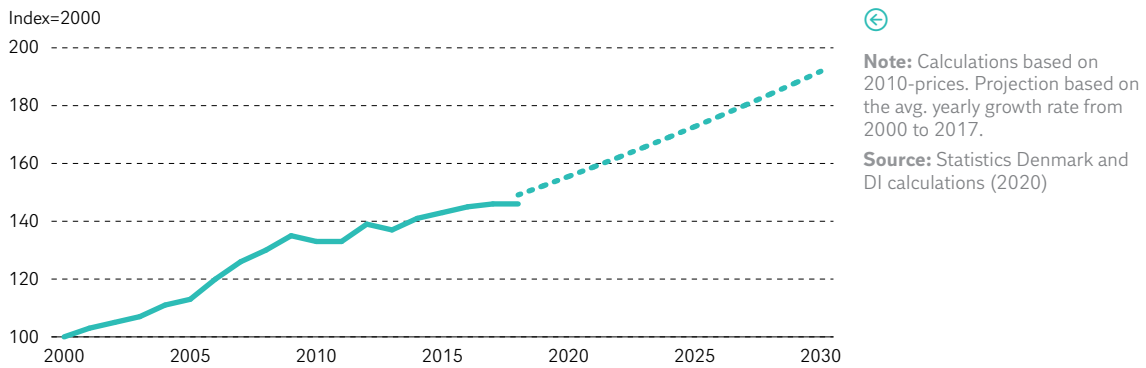
Moreover, several of the most common chronic conditions are areas where life science companies in Denmark, the Danish healthcare sector, and Danish scientists can contribute with knowledge and solutions. Both when it comes to prevention, early detection and diagnostics, treatment, development of new medicine, medical equipment, and health care technology - together contributing to reduce the global burden of disease. We must exploit this.

4 out of 10 Danes suffer from more than one chronic condition



Source: Danish Regions (2019)

Public healthcare expenses



A mutual solution

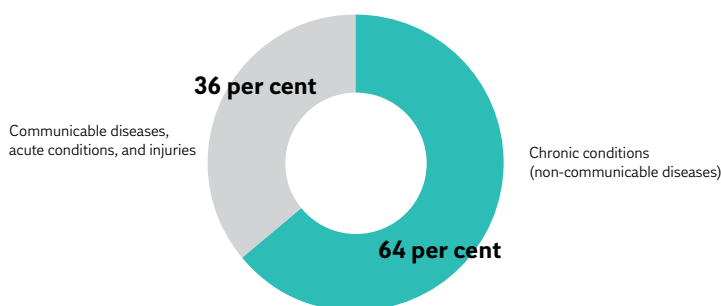
DI suggests that the government and the healthcare sector allocate DKK 20 billion over the next 10 years to build a healthcare sector more capable of preventing chronic conditions and life-threatening diseases.

This way we will reduce the need for treatment of serious diseases and prevent that the health of the Danes and the economy of the healthcare sector gets out of hand.

At the same time, this will make Denmark a global nation of health, contributing to increased health worldwide, through export of Danish healthcare solutions.

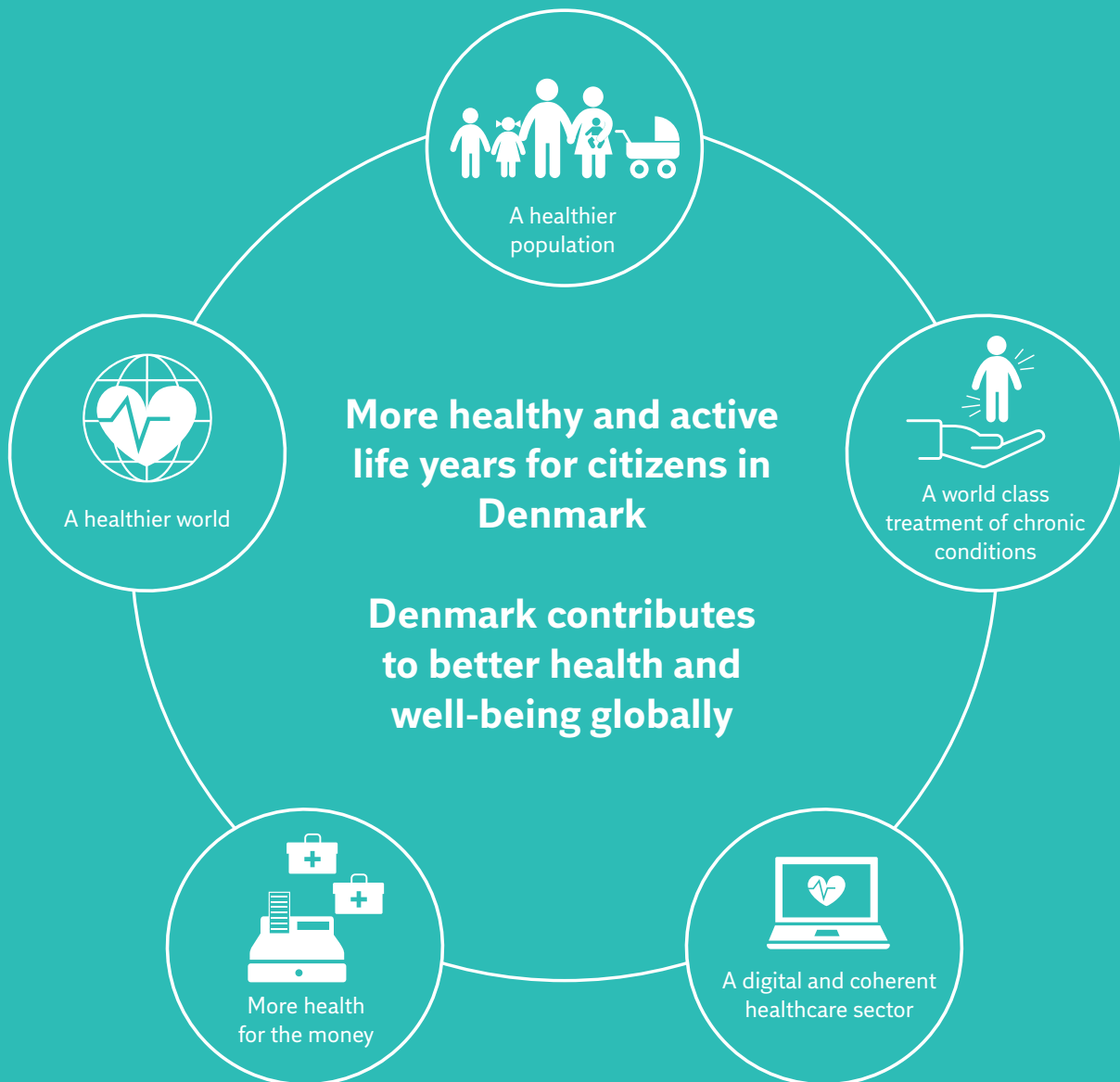
Denmark is capable of much more when the public and the private sector collaborate. This was proven during the COVID-19 pandemic, and we need to exploit this experience further to become more skilled, more diligent – and healthier.

Global burden of disease



Source: IHME: Global Burden of Disease Study (2020)

DI LIFE SCIENCE VISION



DI'S KEY RECOMMENDATIONS FOR A HEALTHIER DENMARK – IN A HEALTHIER WORLD

A healthier population

An increasing part of the Danish population suffers from lifestyle diseases, contributing to a lower life expectancy and fewer expected healthy life years, than populations in comparable countries.

⇒ **DI recommendation:** A national public health effort securing the best possible framework for prevention and health promotion for all citizens throughout life.

A world class treatment of chronic conditions

More people live with chronic conditions and multimorbidity. 4 out of 10 Danes suffer from more than one chronic condition and the number has increased considerable during recent years.

⇒ **DI recommendation:** A national plan for chronic conditions ensuring improved and more coherent treatment combined with labour market participation for people living with chronic conditions.

A digital and coherent healthcare sector

Increased digitalization and improved use of health data is the basis for almost all health research, targeted prevention, detection, and diagnostics, as well as more coherence and better patient involvement in the healthcare sector.

⇒ **DI recommendation:** An acceleration of pace in the implementation of digital health, ensuring a healthcare sector with more digitalization, coherence, and patient involvement.

More health for the money

Correctly prioritizing our investments within health, ensuring both the best treatment for patients as well as an economic sustainable healthcare sector, requires a global outlook, technological insight, clinical experience, and comprehension of the life science sector.

⇒ **DI recommendation:** A close public-private collaboration on the transformation of the healthcare sector – from being a treating to a preventive healthcare sector.

A healthier world

Today research, development and manufacturing of pharmaceuticals, medical devices and other healthcare solutions are globalized. Single-handedly, Denmark will never be able to obtain sufficient health-related security of supplies and access to the newest healthcare technology. The COVID-19 pandemic has clearly shown the importance of an international collaboration regarding health.

⇒ **DI recommendation:** A stronger international collaboration on the development of the future healthcare sector and the fulfilment of UN's Sustainable Development Goals on health and well-being.



A HEALTHIER POPULATION

The population in Denmark has a lower life expectancy and fewer healthy life years than populations in comparable countries^{5,6}. A growing share of the Danish population suffers from lifestyle diseases like obesity⁷, diabetes⁸, cardiovascular diseases⁹ and high blood pressure¹⁰. Many people also suffer from depression and anxiety¹¹. All factors that result in shorter life expectancy reduce our quality of life and weaken the working capacity of the individual employee, in several cases resulting in reduced working hours or a complete withdrawal from the labour market¹².

Only 67 per cent of Danes, suffering from some of the most prevalent chronic conditions, are employed or studying compared to 80 per cent of the general population¹³. Today mental health challenges like anxiety and depression

are the most common reasons for early retirement¹⁴. At the same time, the population is getting older, and the larger generations retire.

Thus, it is important to strengthen the prevention of chronic conditions and increase the efforts to promote general health in the population.

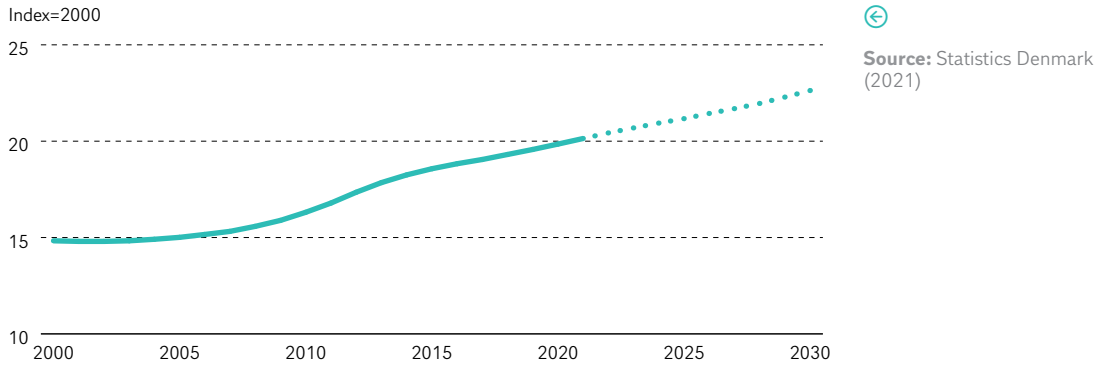
By ensuring improved conditions for lifelong health for all citizens, we are securing a higher life expectancy, improved quality of life and increased employment.

Both the individual citizen, municipality, region, general practitioner, patient association, union, and employer should all participate in the support of better prevention and health promotion.

Expected healthy life years at birth



Share of population older than 65 years



→ DI RECOMMENDATIONS

A national public health effort securing the best possible framework for prevention and health promotion for all citizens, throughout life, including:

- Early identification of citizens in risk of developing chronic conditions, using solutions based on artificial intelligence.
- Offer complete genetic sequencing to 250,000 citizens with increased risk of developing chronic conditions, as part of a new national strategy for personalized medicine. This should include increased capacity and resources for testing and analysis.
- Pilot project on collaboration among unions, private- and public employers, general practitioners, and municipalities on prevention and health promotion (e.g., health counselling).
- Pilot project among companies and municipalities developing preventive healthcare solutions related to the health and well-being of school children.
- Improved opportunities for integration of citizen-generated health data (e.g. through accredited health apps, wearables, and PRO-measuring tools) within the healthcare sector.
- Improved opportunities for data sharing between general practitioner, municipality, and region together with digital decision-support systems for employees in the entire healthcare sector.
- Secure senior citizens as many years as possible in their own home through offers of accredited health-care apps, wearables, video consultations, as well as intelligent assistive devices for home use.
- Safe and easy access to data for use in research and innovation, in cooperation with private companies.
- Strengthen the Food Partnership for Health and Climate assuring that development of healthier and tasty food products is promoted, making these the easy choices for Danes.



A WORLD CLASS TREATMENT OF CHRONIC CONDITIONS

More people live with chronic conditions and multimorbidity; 4 out of 10 Danes live with more than one chronic condition, and the number has grown considerable during recent years. Today approximately a quarter of a million Danes suffer from so called complex multimorbidity and hence, have severely reduced quality of life¹⁵. Complex multimorbidity is when a person has more than four concomitant chronic conditions. Typically, this is conditions such as diabetes, COPD, cardiovascular diseases, rheumatism, and mental health conditions like anxiety and depression.

Multimorbidity and complex multimorbidity is most common among senior citizens and citizens with low levels of education or no education¹⁵, who may experience difficulties navigating in a complex healthcare sector and thus do not get proper access to treatment.

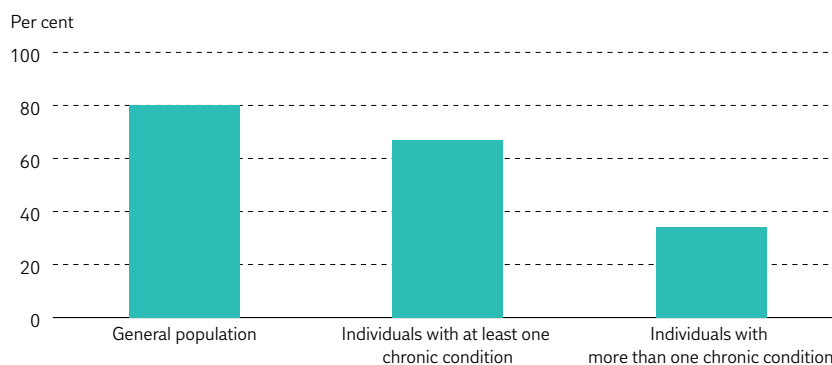
This imposes strong demands for a specialized healthcare service and requires more coher-

ent and consistent quality in the treatment of patients across hospitals, general practitioners, and municipalities. This also requires a particular focus on vulnerable patients.

Only 34 per cent of Danes, living with two or more of the most prevalent chronic conditions, are employed or studying, compared to 80 per cent of the general population¹⁶. This places heavy demands on the municipalities' employment initiatives and the collaboration with unions and employers.

Finally, treatment of mental illness has not been a priority on equal terms with treatments of somatic (physical) illness, although the consequences may be just as severe for the individual and their relatives. The existing efforts within the mental health services has been fragmented and characterized by local projects and initiatives, without an overall holistic effort that includes the entire healthcare sector.

Share of population who are employed or studying



Note: Employment rate based on selected chronic conditions like diabetes, COPD, osteoporosis, and rheumatoid arthritis.

Source: The Danish health data authority (2018)

→ **DI RECOMMENDATION**

A national plan for chronic conditions ensuring improved and more coherent treatment combined with labour for citizens living with chronic conditions, including:

- Standardized and binding course of treatment packages covering the larger chronic disease areas, based on clinical guidelines across hospitals, general practitioners, and municipal healthcare services. These courses of treatment should be adjusted to the individual needs of patients and include patient education.
- To ensure more equality in health, specific pathways should be developed for vulnerable patients, covering holistic health dialogue with general practice and a course coordinator.
- Consistent demands of documentation and standards for treatment of chronic conditions across hospitals, municipalities, and general practice. These health data must be available for the entire healthcare sector. Safe and easy access to data must be provided for research and innovation, in cooperation with private companies.
- All chronic patient groups should be supported by telemedical solutions before 2030 (e.g., accrediting healthcare apps, wearables, digital supported medication review, offer of home monitoring and video consultations).
- Local pilot projects on the collaboration between unions, private- and public employers as well as municipalities on strengthening the labour market affiliation for citizens living with chronic conditions.
- By 2030 at least 80 per cent of undiagnosed chronic conditions must be detected and diagnosed at an earlier state than today.
- By 2030 at least 80 per cent of all chronic patients should be well-treated in accordance with clinical guidelines.
- Establish a national 10-year action plan for the mental health services, creating equality between somatic and psychiatric healthcare.
- The national plan for chronic conditions must be embedded in the 21 healthcare clusters.



A DIGITAL AND COHERENT HEALTHCARE SECTOR

Increased digitalization and improved use of health data is the basis for practically all health research, more targeted prevention, detection, and diagnostics, as well as more coherence and better patient involvement in the healthcare sector.

There is a need for increased digitalization of workflows across the municipalities, general practices, and hospitals. However, there is also a need for increased digitalization of the patient centred contact through telemedical solutions like health apps, wearables, video consultations, and online pharmacies. Finally, there is a need for safe and easy access to public health data for health research and innovation – in collaboration with private companies.

Focus is already on digitalization of the healthcare sector, and good initiatives like "Research Health Data Gateway" ("Én indgang til sundhedsdata") is already implemented. However, there is a need for an acceleration of pace if the digitalization of the healthcare sector to improve its ability to prevent illness and chronic conditions.

New healthcare solutions must be patient centred and make the healthcare sector better at predicting, preventing, diagnosing, treating, and monitoring chronic conditions and life-threatening diseases.

This calls for significant investments in digitalization of the healthcare sector over the coming years.

⇒ DI RECOMMENDATIONS

An acceleration of pace in the implementation of digital health, ensuring a healthcare sector with more digitalization, coherence, and patient involvement:

- A national strategy on health data, including more resources and digital competencies for case handling, as well as consistent GDPR interpretation guidelines related to research and innovation with health data.
- A national documentation practice and standardized data formats across general practices, municipalities, and hospitals.
- Improved possibilities to analyse health data combined with the citizens' self-generated data.
- Digital integration in – and between – the 21 healthcare clusters, including clarification and removal of barriers for intersectoral data sharing. Patients and relatives ought to have access to their own healthcare data and actively participate in treatment and follow up.
- Improved opportunities to continue the use of data from pilot and research projects to operational healthcare solutions.
- More consistent use of digital healthcare solutions across the healthcare sectors, including the use of existing market solutions for treatment and storage of health data. This will make the development and scaling of new healthcare solutions easier.
- All chronic patient groups should be supported by telemedical solutions by 2030.
- General practice should be fully integrated in the public IT-structure for the healthcare sector, including data sharing on equal terms with regions and municipalities. Additionally, general practitioners should offer video consultation, remote monitoring, and remote diagnosis, when considered medically safe.
- Elimination of the pharmacist ownership to pharmacies, and hence fair terms of competition for online pharmacies, will contribute to better access to medicine across Denmark.



MORE HEALTH FOR THE MONEY

With increasing speed, the development of health technology leads to new breakthroughs. Genome sequencing, personalized medicine, artificial intelligence, intelligent medical equipment, and innovative pharma are all examples of relatively new healthcare technologies, not yet implemented into the Danish healthcare sector on a larger scale.

What are the future needs of patients and healthcare professionals? What technology will best meet their needs? And which healthcare crisis can we expect to see? Should Denmark focus on the development of vaccines for COVID-19 or cancer? Or genome sequence all Danish citizens so that prevention, diagnostics, and treatment become more targeted and effective?

It requires global outlook, technological insight, clinical experience, and understanding of market dynamics to prioritize correctly and secure both the best treatment and an economically

sustainable healthcare sector. Consequently, the healthcare sector, authorities, research institutions, and life science industry must collaborate on ensuring the future healthcare sector, including the development of models for innovative procurement and financing.

The public-private collaboration must lead to:

- Increased span and quality of life
- Faster and better examination and diagnostics
- Fewer medication errors
- More treatments in own home
- Fewer hospitalizations and re-hospitalizations
- Shorter length of stay per hospitalization
- Higher patient satisfaction and involvement
- Higher productivity in the healthcare sector

DI RECOMMENDATIONS

A close public-private collaboration on the transformation of the healthcare sector – from being a treating to a preventive healthcare sector, including:

- Establishment of a public-private partnership for strategic research, innovation, and purchasing who shall advise on the future development of the healthcare sector, including long term goals based on the need of the healthcare sector and Denmark's positions of strength (e.g., disease areas and technology). The partnership shall focus on both health-related and economic effects of new healthcare technology.
- Strengthen the framework for public-private collaboration on:
 - Research projects
 - Clinical research
 - Mapping of research- and innovation needs
 - Innovative procurement
 - Implementation of new healthcare technology
- Innovation centres under the auspices of the new healthcare clusters should be established across regions, municipalities, general practice, and pharmacies to enable continuing education of healthcare professionals in the use of new technology and to identify new research and innovation needs within the healthcare sector.
- Faster and more transparent procedures for approval of new healthcare solutions.



A HEALTHIER WORLD

The COVID-19 pandemic has clearly shown the importance of international collaboration within health. Today research, development, and manufacturing of pharmaceuticals, medical devices, and other healthcare solutions are globalized.

A small country like Denmark is best served by developing and nurturing strong international relations, both bilaterally, with leading healthcare nations and our primary export markets, as well as multilaterally in WHO, OECD, and EU. Denmark will never be able to obtain sufficient health-related security of supply and access to

the newest healthcare technology if we stand alone. Additionally, we will have trouble maintaining the large export of healthcare solutions, which have contributed to support Danish economy during the COVID-19 pandemic, unless Denmark actively seeks international collaboration.

Therefore, it is important that Denmark look for strong alliances on the global health policy stage and enter regulatory cooperation with countries which we can learn from, export healthcare solutions to, or import healthcare solutions from.

⇒ DI RECOMMENDATIONS

A stronger international collaboration on the development of the future healthcare sector and the fulfilment of UN's Sustainable Development Goals on health and well-being, including:

- A strategic international health policy for Denmark with the purpose of promoting Danish healthcare solutions, and strengthen the regulatory collaboration and the international effort for increased health and well-being in the world (SDG 3), together with coordinating a common protection of interests with similar countries in WHO, OECD, and EU.
- An international forum of like-minded countries, consisting of representatives from the healthcare sector, authorities, research institutions, and life science industry from some of the world's leading healthcare nations. The forum should facilitate increased international collaboration and knowledge sharing on the development of the future healthcare sector.
- A Danish health ambassador with a strong network, extensive knowledge within the healthcare area, and the necessary access to international partners. The health ambassador should promote Denmark as a health-nation and strengthen the international effort for increased health and well-being in the world (SDG 3) focusing especially on chronic conditions.

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